

PCT Appl. No.: PCT/AU00/00974
U.S. Serial No.: Not Yet Known
U.S. Filing Date: Herewith

A described as 700 to 850°C with a resultant product-gas composition of 65-80 vol% H₂, 5-20 vol% CO, and 5-25 vol% CO₂--

Please replace the paragraph beginning at page 4, line 16 with the following rewritten paragraph:

A2 --By the present invention, a substantially wider source of fuel may be used for the fuel cell than just methane and/or hydrogen, including ethane and liquid higher hydrocarbons such as propane, butane, liquefied petroleum gas (LPG), gasoline (petrol), diesel, kerosene, fuel oil, jet oil, naphtha and mixtures of these, while a lower temperature of no greater than 500°C may be used for steam pre-reforming the higher hydrocarbon fuel source since there is no requirement to reform any methane in the steam pre-reformer. This permits a relatively small pre-reformer reactor to be used which, combined with the reduced maximum operating temperature of 500°C, enables a simplified and therefore cheaper pre-reformer system to be adopted. Such low temp steam pre-reforming also alleviates carbon deposition in the pre-reformer.--

IN THE CLAIMS:

Claims 1, 2, 7, 8, 10 and 15 are to remain unchanged. Please amend claims 3, 4, 5, 6, 9, 11, 12, 13 and 14 to read as follows:

- A3
3. ~~[(Amended)]~~ A process according to claim 1 in which the fuel stream includes no less than about 40% by volume methane measured on a wet basis.
 4. ~~[(Amended)]~~ A process according to claim 1 in which the temperature in the steam pre-reformer is no more than about 450°C.
 5. ~~[(Amended)]~~ A process according to claim 1 in which the reaction of the fuel with steam in the methane generator is performed adiabatically.

PCT Appl. No.: PCT/AU00/00974
U.S. Serial No.: Not Yet Known
U.S. Filing Date: Herewith

A3
6. [(Amended)] A process according to claim 1 in which the steam to carbon ratio in the methane generator is no more than 1.5.

A4
9. [(Amended)] A process according to claim 1 in which the fuel is a C₃₊ hydrocarbon fuel.

AS
11. [(Amended)] A process according to claim 1 in which the fuel is selected from the group consisting of ethane, propane, butane, LPG, gasoline (petrol), diesel, kerosene, fuel oil, jet oil, naphtha and mixtures of two or more of these.

12. [(Amended)] A process according to claim 1 in which the reaction at the anode of the fuel cell is performed at a temperature of at least 700°C.

13. [(Amended)] A process according to claim 1 in which waste heat from the fuel cell is recycled to the steam pre-reformer.

14. [(Amended)] A process according to claim 1 in which the reaction in the steam pre-reformer results in the conversion of at least 97.5% of the higher carbon (C₂₊) hydrocarbon fuel.

Please add new claims 16 through 21 as follows:

A6
--16. A process according to claim 1 in which the fuel stream includes no less than about 50% by volume methane measured on a wet basis.

17. A process according to claim 1 in which the fuel stream includes no less than about 60% by volume methane measured on a wet basis.

18. A process according to claim 1 in which the temperature in the steam pre-reformer is in a range of about 250°C to 450°C.